Technology Challenges - A Business Jet Manufacturer's Perspective

Rob Wolz

Director, Preliminary Design

Gulfstream Aerospace Corporation

Our Business and Our Strategy

Gulfstream sets the World Standard in Business Aviation

Over 44 years of satisfying the world's most demanding travelers with...

- **Performance and Operational Flexibility**
- **Comfort and In-Flight Productivity**
- **Safety and Security**
- **Reliability**
- **Exceptional Quality**

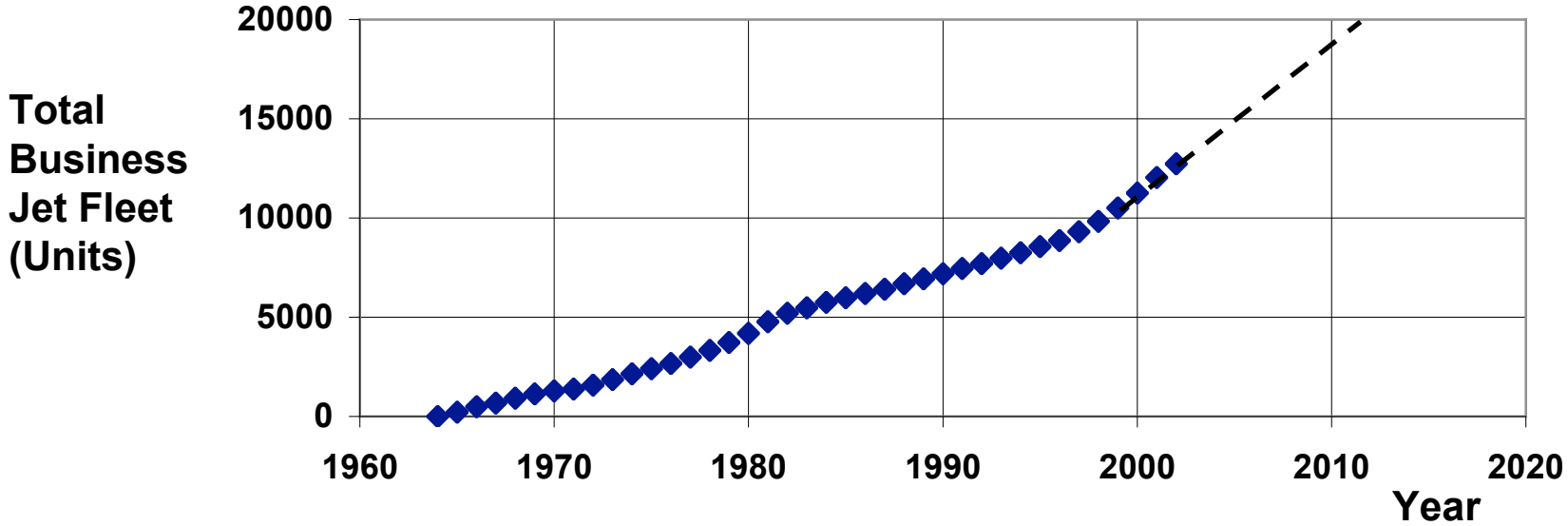
<u>Our Vision</u>

Set the standard for business aviation through excellence in people, product, service and financial return

<u>Appropriate use of technology</u> -- a key strategy to provide value and thereby achieve corporate objectives.

Travel Demands and Business Aviation Growth

- **Business aircraft enhance mobility and are tools for economic growth.**
- **By the end of this decade, it is estimated that more than 1 billion passengers will fly on U.S. airlines annually.**
- **The business jet fleet… 10,000 aircraft in 35 years (1965-2000).**
- **Industry forecasters predict the delivery of 10,000+ new business jets during the 11 year period 2001-2011.**



Can we continue to provide the market with ever increasing levels of safety, reliability, mobility and efficiency?

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Meeting the Market Demand for Value

Business aviation has a history of embracing new technology

- Aerodynamic concepts such as winglets and advanced high speed airfoil technology
- Quiet, fuel efficient, and reliable electronically controlled propulsion systems
- Advanced flight decks… flexible displays, integrated controls, and "smart" flight management systems
- Enhanced vision systems
- In-flight SATCOM systems and other productivity tools
- IRCM defensive counter measures

Pushing the Performance Envelope

Today's Reality

Tomorrow's Vision

Max Weight	90,900 lb	100,000 lb
Typical Payload	8 pax	8 pax
TO Field Length	6,000 ft	6,000 ft
Cruise Speed	0.80 M	1.80 M
Range	6,750 nm	4,800 nm

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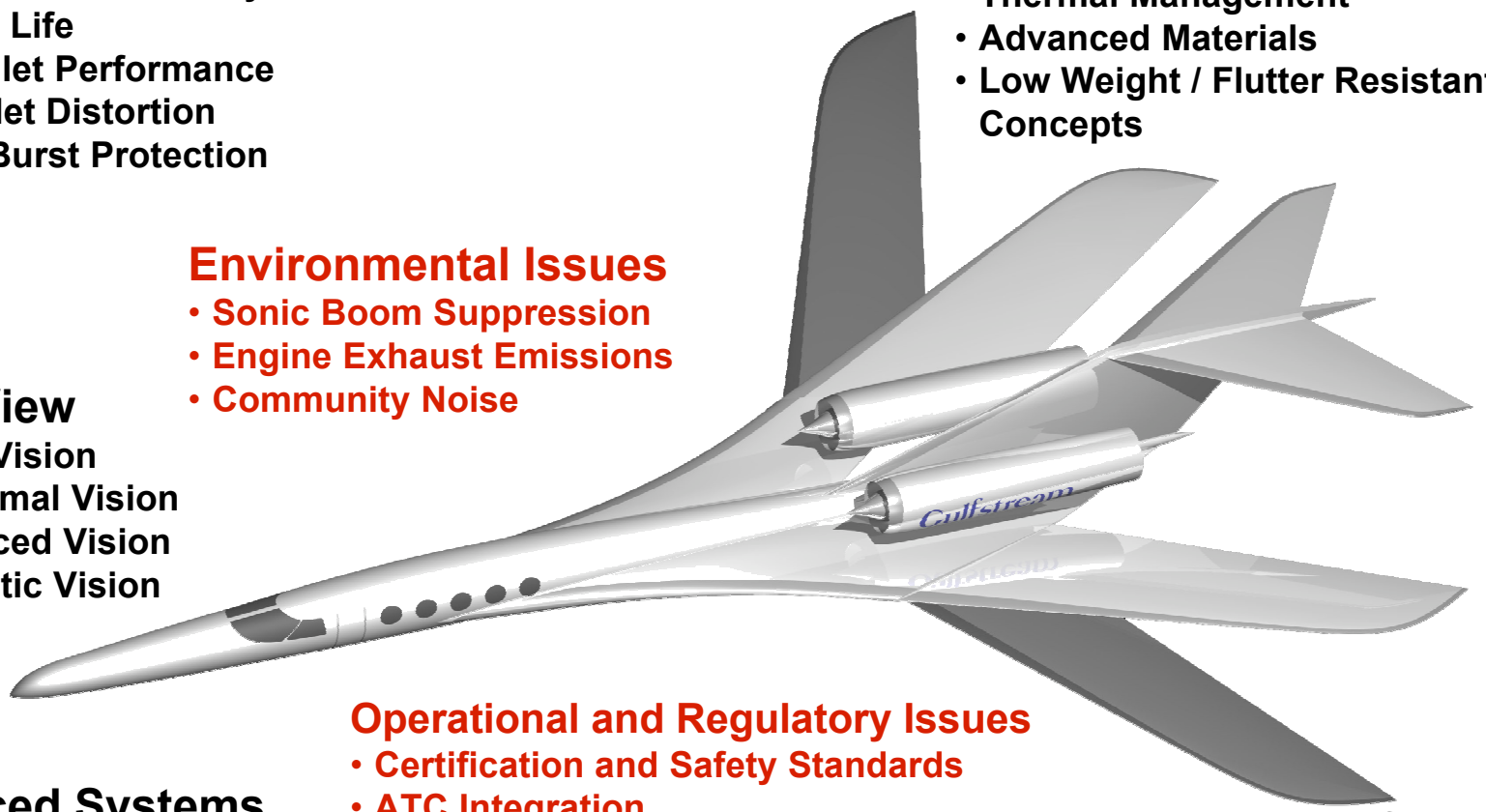
QSJ Technical Challenges

Propulsion Integration
- Engine Fuel Efficiency
- Engine Life
- High Inlet Performance
- Low Inlet Distortion
- Rotor Burst Protection

Structural Arrangement
- Structural Stiffness
- Thermal Management
- Advanced Materials
- Low Weight / Flutter Resistant Concepts

Environmental Issues
- Sonic Boom Suppression
- Engine Exhaust Emissions
- Community Noise

Pilot View
- Video Vision
- Conformal Vision
- Enhanced Vision
- Synthetic Vision



Operational and Regulatory Issues
- Certification and Safety Standards
- ATC Integration
- High Altitude Operations

Advanced Systems
- FBW / FBL / PBW
- Variable Geometry Systems
- CG Management

Aerodynamic Performance
- High Supersonic L/D
- High CLmax
- Handling Qualities

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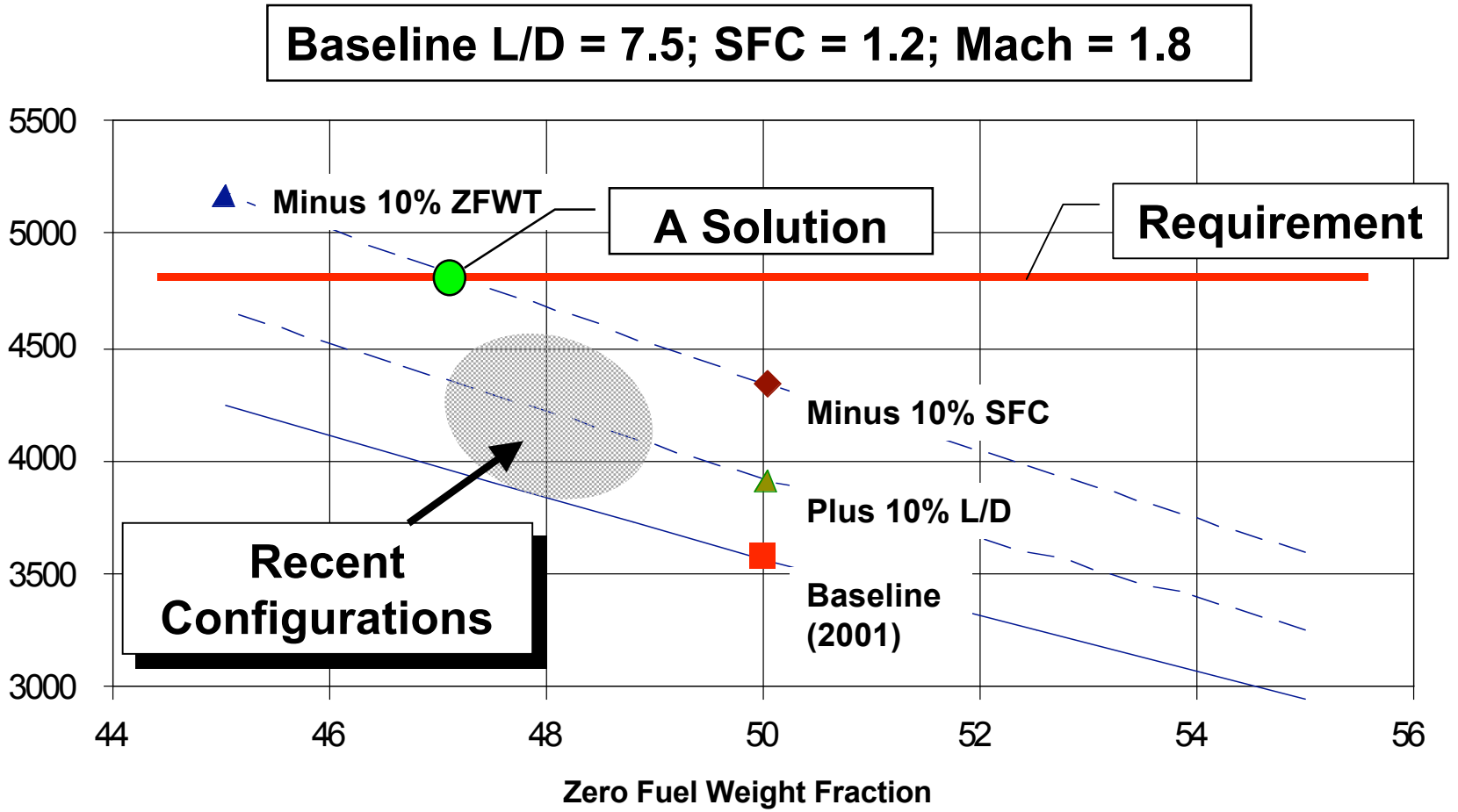
Technology Targets Must Be Achieved



Aerodynamics, Propulsion, Structures, & Materials Advancements Are Required

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Summary – Business Aircraft View

- **Business Aircraft are Valued Tools and the Market Is Continuing to Grow**
- **Business Aircraft Companies Are Entrepreneurial**
- **Aeronautical Innovation Often Is Lead By Business Aircraft Companies**
- **Dramatic Future Advances Are Being Considered**

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